NATIONAL WEATHER SERVICE INSTRUCTION 10-320
November 1, 2002

Operations and Services
Marine and Coastal Weather Services Program, NWSPD 10-3

COASTAL/LAKESHORE FLOOD SERVICES

NOTICE: This publication is available at: http://www.nws.noaa.gov/directives/.

OPR: OS21 (T. Schott) **Certified by:** OS21 (T. Pierce)
Type of Issuance: Initial

SUMMARY OF REVISIONS: This directive supersedes WSOM Chapter C-43, Coastal Flood Program, issuance 93-11, dated August 18, 1993; WSOM Chapter D-07, Marine Weather Service Program, issuance 91-15, dated October 11, 1991; WSOM Chapter D-51, Marine Services for Coastal, Offshore, and High Seas, issuance 94-02, dated March 21, 1994; WSOM Chapter D-52, Marine Services for the Great Lakes, issuance 91-02, dated March 29, 1991; and WSOM Operations Manual Letter 07-01, Lakeshore Flood Products, dated August 6, 2001.

Signed by Gregory A. Mandt September 7, 2002
Gregory A. Mandt Date
Director, Office of Climate,
Water, and Weather Services

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1. Purpose. This directive provides guidelines for issuing Coastal/Lakeshore Flood Statements, Watches and Warnings for significant coastal/lakeshore flood events.

a. Coastal/lakeshore flooding affects land-based and near shore interests along much of the U.S. coastline. This directive will address two types of flooding:

(1) **Coastal Flooding**. The inundation of land areas by oceanic or sea water over and above normal tidal action. This flooding may impact the immediate oceanfront, gulfs, bays, back bays, sounds, tidal portions of river mouths and inland tidal waterways.

(2) **Lakeshore Flooding**. The inundation of land areas along any of the Great Lakes over and above normal lake levels. This flooding may impact the

immediate lakefront, bays, and interfaces between the Great Lakes and connecting waterways, such as rivers.

NWSI 10-301 provides definitions and terms of reference associated with coastal/lakeshore flooding.

Coastal/lakeshore flooding intensities range from minor water overflow, with little or no damage, to extensive inundation and beach erosion. Coastal flooding is highly dependent on local coastline topography and nearshore bathymetry. Weather Forecast Offices (WFOs) with marine responsibilities should maintain records of previous coastal flood events and benchmark data (e.g., tide datum, storm summaries with pertinent observations, and a description of the synoptic situation, etc.) to respond to potential flooding episodes.

2. Responsibilities. WFOs with Great Lakes or coastal waters forecast areas of responsibility (see NWSI 10-302) will issue Coastal/Lakeshore flood products.

Each WFO having coastal/lakeshore flood responsibility will coordinate closely with adjacent WFOs and, when appropriate, the responsible River Forecast Center (RFC). Coordination with the RFC will ensure product consistency when the combined effects of river discharge and storm surge or tidal piling affect river outlets to increase the severity of coastal/lakeshore flooding. See paragraph 4.4 for the relationship between WFO Coastal Flood products and tropical cyclone products issued by the Tropical Prediction Center (TPC).

3. Coastal/Lakeshore Flood Products (AWIPS Category CFW). Use a CFW to issue all Coastal/Lakeshore flood products, including statements, watches, and warnings. For more detailed information consult NWSI 10-1701, Text Product Formats and Codes.

All CFWs will use the following product format:

(WMO HEADER) (ISSUANCE DATE TIME)
(AWIPS IDENTIFIER)
(AREAL UGC CODES[S])-(EXPIRATION TIME)-
(COASTAL FLOOD STATEMENT, WATCH, or WARNING) or (LAKESHORE FLOOD STATEMENT, WATCH, or WARNING)
NATIONAL WEATHER SERVICE (CITY) (STATE)
(VALID TIME) AM/PM (LOCAL TIME)(DAY)(DATE)

BULLETIN - IMMEDIATE BROADCAST REQUESTED (for watches and warnings)

...HEADLINE...

Text
$$ (required)
Name (Optional)

3.1 Coastal/Lakeshore Flood Watch/Warning

a. Use a "COASTAL/LAKESHORE FLOOD WATCH" to inform the public coastal/lakeshore flooding is possible. A watch should be issued 12 to 36 hours in advance.

b. Use a "COASTAL/LAKESHORE FLOOD WARNING" to inform the public coastal/lakeshore flooding, posing a serious threat to life and property, is occurring, imminent, or highly likely in the first forecast period (first 12 hours).

WFOs may issue warnings valid after the first forecast period when a strong likelihood of the event exists or when a longer advance notice is needed for public response.

c. Contents of a Coastal/Lakeshore Flood Watch/Warning. Coastal/lakeshore flood watches and warnings will include:

(1) The expiration time in the communications header.

(2) The affected land zones in the communications header.

(3) The phrase "BULLETIN-IMMEDIATE BROADCAST REQUESTED" in the line immediately above the header of a Coastal/Lakeshore Flood Watch or Warning.

(4) For a warning, an indication of the severity of the flooding including expected water levels in either inches or feet and tenths, but not both. This may be given with reference to low water normals or recent averages. WFOs may use general terms regarding beach erosion, associated weather, and wave heights. WFOs may include location-specific information as reported to the NWS by emergency management officials. For more significant events the forecaster may reference a previous well-known (historical) high water event.

(5) The definition of a Coastal/Lakeshore Flood Watch/Warning (i.e., A LAKESHORE FLOOD WARNING MEANS FLOODING AND BEACH EROSION WILL OCCUR.)

3.2 Coastal/Lakeshore Flood Statement. Issue Coastal/Lakeshore Flood Statements to:

a. Keep the public updated on existing watches and warnings. Statements should be issued at least every 6 hours after watches and warnings are raised. Statements issued to routinely update an existing watch or warning will include information similar to that in the original product (see Section 3.1). The headline(s) will

include the same information as in the watch or warning and will note the watch or warning continues to be in effect, such as:

...A COASTAL FLOOD WATCH REMAINS IN EFFECT UNTIL 3 AM THURSDAY FOR THE ENTIRE TEXAS COAST SOUTH OF GALVESTON...

b. Cancel a watch or warning, remove areas from a watch or warning, or to announce the expiration of a warning, such as:

...A COASTAL FLOOD WATCH CONTINUES IN EFFECT UNTIL 3 AM THURSDAY FOR THE TEXAS COAST SOUTH OF CORPUS CHRISTI...

...A COASTAL FLOOD WATCH FOR THE TEXAS COAST FROM CORPUS CHRISTI TO GALVESTON HAS BEEN CANCELLED...

c. To address less severe coastal/lakeshore flooding events.

d. To direct users to a Hurricane Local Statement. See the Tropical Cyclone discussion in Section 4.4.

e. Contents of Coastal/Lakeshore Flood Statement. Coastal/Lakeshore Flood Statements will include:

(1) The expiration time in the communications header. If a Statement is issued with the intent of clearing all zones from a previously issued watch or warning, then the Statement expiration time is normally one hour after the Statement issuance time.

(2) The affected land zones in the communications header.

(3) Information on the location, areal coverage, severity, and expected duration of the event.

4. Consistency with other NWS Products. Forecasters must coordinate and ensure consistency among products within their WFO, neighboring WFOs, RFC, and the National Centers. For example:

4.1 Zone, Coastal, and Nearshore Forecasts. Coastal/Lakeshore Flood Watches/Warnings must be headlined in associated public zone forecasts. Coastal/Lakeshore Flood Watches/Warnings may be referenced in associated coastal/nearshore forecasts.

4.2 Hazardous Weather Outlook (AWIPS Category SPS). The Hazardous Weather Outlook (HWO) details the type, time, and location of potentially significant weather, water, and climate events in the WFO's County Warning Area (CWA) for the following 24 hours. The HWO

provides emergency managers with early notice of potentially hazardous conditions. Coastal flood events may be included in the HWO, but periodic event updates must be made using the CFW (Coastal Flood Statement, Watch, or Warning) product.

4.3 Short Term Forecast (AWIPS Category NOW). The Short Term Forecast provides users with a plain language description of current and short-term weather and flooding conditions for the WFO's CWA. To comply with the intention of the product, coastal flood information in the Short Term Forecast will be as brief as possible. Therefore, the Short Term Forecast will augment, but not replace, the Coastal Flood Statement and its more specific details.

4.4 Hurricane Local Statement (AWIPS Category HLS). Tropical cyclones may generate any combination of storm surge, coastal flooding, or high surf. NWSI 10-601, Tropical Cyclone Products, provides additional coordination guidance for these situations.

Coastal flooding may occur at great distances from the actual center of a tropical system. This could occur when a tight gradient establishes well in advance of a tropical cyclone. If tropical cyclone watches/warnings have not been issued by the respective Tropical Cyclone Prediction Center impacting the CWA, then Coastal Flood Statements/Watches/Warnings will be issued by the WFO, if warranted.

If tropical cyclone watches/warnings have been issued by the respective Tropical Cyclone Prediction Center impacting the CWA, then a Hurricane Local Statement (HLS) will be used by the WFO.

In the event an existing Coastal Flood Watch or Warning will be superseded by a tropical cyclone watch or warning, then a Coastal Flood Statement should be issued by the WFO–prior to the release of the WFO's HLS–directing users to HLSs as the comprehensive WFO product detailing storm effects, to include coastal flooding.

4.5 High Surf Advisory. High surf may be characterized by observations specific to a geographical area, such as large waves breaking in the surf zone with sufficient energy to erode beaches, move large logs, wash over jetties or exposed rocks, etc. High Surf Advisories may be issued using Marine Weather Statements, NWSI 10-314, or in conjunction with Coastal/Lakeshore Flood Statements, Watches, or Warnings. High Surf Advisories may be referenced in the Surf Zone Forecast (SRF).

5. Dissemination. Marine products dissemination is detailed in NWSI 10-304. All available dissemination sources should be utilized to inform emergency services personnel, the general public, and other cooperating agencies of the possibility or occurrence of coastal/lakeshore flooding. This is particularly important because coastal/lakeshore flooding can occur without the weather events the populace typically associates with severe weather, such as high wind and heavy rain.

6. Water Level Observations and Dissemination

6.1 Tidal Observations. A WFO's real-time access to accurate water-level data is especially important during times of exceptionally high tide.

The National Ocean Service (NOS) collects and distributes real-time tidal observations and predictions.

The NOS Center for Operational Oceanographic Products and Services (COOPS) web site includes PORTS (Physical Oceanographic Real Time System) and Predictions with current tidal observations and daily high and low water tide predictions for tidal reference stations. The web site is:

http://www.co-ops.nos.noaa.gov/

WFOs should maintain close contact with emergency management officials in coastal communities having access to, and interest in, water-level data augmenting official gauging systems/networks. Forecasters should be familiar with terminology associated with tide measurements. Many of these definitions are provided in NWSI 10-301.

6.2 NWS Tide Reports. Some WFOs issue routine tide reports, while other offices only issue tide reports on an as-needed basis during significant coastal events. Most tide reports are issued using the AWIPS product identifier TID.

Reference tide reports to standard datums used by the NOS. For most areas the reference tidal datum is Mean Lower Low Water (MLLW).

6.3 Great Lakes Water Levels. Data for lake water levels are available from the Army Corps of Engineers and the NOS.

6.4 NWS Great Lakes Water Level Report. Some WFOs disseminate periodic water level reports, while other offices only issue reports on an as-needed basis. Water level reports are issued using the AWIPS product identifier OMR.

APPENDIX A - EXAMPLES OF NWS COASTAL/LAKESHORE FLOOD PRODUCTS

1. Examples of Coastal/Lakeshore Flood Watches

Example Lakeshore Flood Watch

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WHUS61 KGRR 260845
CFWGRR
MIZ037-043-050-056-064-071-077-262300-

BULLETIN - IMMEDIATE BROADCAST REQUESTED
LAKESHORE FLOOD WATCH
NATIONAL WEATHER SERVICE GRAND RAPIDS MI
445 AM EDT FRI OCT 26 2001

...A LAKESHORE FLOOD WATCH IS IN EFFECT TODAY ALONG THE LAKE
MICHIGAN COAST FROM THE INDIANA/MICHIGAN BORDER TO MANISTEE...

A DEEPENING LOW PRESSURE SYSTEM IN WESTERN QUEBEC WILL AFFECT
LAKE MICHIGAN TODAY.  CURRENTLY WINDS ARE GUSTING TO 30 MPH AND
WAVES RANGE FROM 4 TO 6 FEET.  HOWEVER... BY THIS AFTERNOON WINDS
ARE EXPECTED TO GUST TO 60 MPH AND WAVES MAY INCREASE UP TO 18
FEET.

REMEMBER...A LAKESHORE FLOOD WATCH MEANS LAKESHORE FLOODING IS
POSSIBLE.  PEOPLE ALONG THE LAKE MICHIGAN SHORELINE SHOULD BE
READY TO MOVE TO SAFE GROUND AND TAKE ACTION IF FLOODING OCCURS
OR IF WARNINGS ARE ISSUED.   MINOR FLOODING HAS ALREADY BEEN
REPORTED NEAR BIG SABLE POINT.   LISTEN TO LOCAL
RADIO...TELEVISION...OR NOAA WEATHER RADIO FOR FURTHER
INFORMATION.

WARNINGS WILL BE ISSUED IMMEDIATELY AS CONDITIONS WARRANT.  THE
NEXT SCHEDULED STATEMENT ON THIS POTENTIAL FLOODING EVENT WILL BE
ISSUED AROUND 11 AM.
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Example Coastal Flood Watch

WHUS41 KOKX 300719
CFWOKX
CTZ009-NYZ071>077-301700-

COASTAL FLOOD WATCH
NATIONAL WEATHER SERVICE NEW YORK NY
320 AM EDT SUN SEP 30 2001

...A COASTAL FLOOD WATCH IS IN EFFECT FOR TONIGHT...

THE NATIONAL WEATHER SERVICE HAS ISSUED A COASTAL FLOOD WATCH FOR PEOPLE LIVING ALONG THE SHORES OF NEW YORK CITY...COASTAL WESTCHESTER...COASTAL FAIRFIELD AND COASTAL NASSAU COUNTIES FOR TONIGHT'S HIGH TIDES.

A LARGE AREA OF HIGH PRESSURE EXTENDING FROM THE GREAT LAKES NORTHEAST ACROSS NEW ENGLAND AND AN INTENSIFYING LOW PRESSURE SYSTEM OFF THE MID ATLANTIC COAST WILL PROLONG THE STRONG NORTHEAST WINDS THAT DEVELOPED DURING EARLY SATURDAY. NORTHEAST GALES BLOWING ACROSS A LARGE DISTANCE OR FETCH WILL PILE WATER ALONG THE COAST TODAY AND TONIGHT.

MINOR TIDAL FLOODING IS FORECAST THIS MORNING FOR MOST SHORES BORDERING LONG ISLAND SOUND AND THE ATLANTIC OCEAN. FOR LONG ISLAND SOUND...TIDAL DEPARTURES WILL RANGE FROM AROUND 1.5 FEET ABOVE NORMAL AT NEW LONDON CT TO 2.5 FEET ABOVE NORMAL AT KINGS POINT NY. FOR THE ATLANTIC SHORES...TIDAL DEPARTURES WILL RANGE FROM AROUND 1.5 FEET ABOVE NORMAL AT MONTAUK POINT TO 2.1 FEET ABOVE NORMAL AT SANDY HOOK NJ. MODERATE TIDAL FLOODING IS POSSIBLE IN ISOLATED AREAS SUCH AS FREEPORT NY.

MODERATE TIDAL FLOODING MAY OCCUR ACROSS SEVERAL AREAS DURING TONIGHT'S HIGH TIDES BEFORE MIDNIGHT. FOR LONG ISLAND SOUND...TIDAL DEPARTURES WILL RANGE FROM AROUND 2 FEET ABOVE NORMAL AT NEW LONDON CT TO AROUND 3 FEET ABOVE NORMAL AT STAMFORD CT AND KINGS POINT NY. FOR THE ATLANTIC SHORES...TIDAL DEPARTURES WILL RANGE FROM AROUND 1.5 FEET ABOVE NORMAL AT MONTAUK POINT TO AROUND 3 FEET ABOVE NORMAL AT SANDY HOOK NJ.

AS THE LOW MOVES WELL OFFSHORE...WINDS WILL SHIFT TO THE NORTHWEST ON MONDAY...WHICH WILL CAUSE TIDAL DEPARTURES TO RECEDE BACK TO MORE NORMAL LEVELS.

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BELOW ARE TIMES OF HIGH TIDE AND FORECAST HEIGHTS FOR SELECTED LOCATIONS...

LOCATION	TIME	ASTRONOMICAL TIDE LVL (MLLW)	MINOR FLOODING BEGINS (MLLW)	MODERATE FLOODING BEGINS (MLLW)	FORECAST HEIGHT (MLLW)
TODAY...					
THE BATTERY NY	750 AM	4.8 FT	6.7 FT	8.0 FT	6.7 FT
FREEPORT NY	736 AM	3.2 FT	5.2 FT	5.9 FT	5.4 FT
KINGS POINT NY	1115 AM	7.7 FT		10.5 FT	10.2 FT
STAMFORD CT	1043 AM	7.6 FT	9.5 FT	11.1 FT	10.0 FT
BRIDGEPORT CT	1041 AM	7.1 FT	8.9 FT	10.4 FT	9.2 FT
TONIGHT...					
THE BATTERY NY	803 PM	5.1 FT	6.7 FT	8.0 FT	7.7 FT
FREEPORT NY	823 PM	3.4 FT	5.2 FT	5.9 FT	5.9 FT
KINGS POINT NY	1132 PM	7.6 FT		10.5 FT	10.7 FT
STAMFORD CT	1101 PM	7.6 FT	9.5 FT	11.1 FT	10.5 FT
BRIDGEPORT CT	1059 PM	7.1 FT	8.9 FT	10.4 FT	9.7 FT

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2. Examples of Coastal/Lakeshore Flood Warnings

Example Lakeshore Flood Warning

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WHUS61 KBUF 121501
CFWBUF
NYZ010-019-122100-

BULLETIN - IMMEDIATE BROADCAST REQUESTED
LAKESHORE FLOOD WARNING
NATIONAL WEATHER SERVICE BUFFALO NY
1000 AM EST TUE DEC 12 2000

...WARNING...LAKESHORE FLOODING ALONG LAKE ERIE FROM DUNKIRK
TO BUFFALO NEW YORK THROUGH THIS EVENING...

A STRONG STORM SYSTEM IS PRODUCING SUSTAINED WESTERLY WINDS
OF UP TO 60 MILES AN HOUR OVER LAKE ERIE THIS MORNING.  THESE
WINDS ARE PILING WATER UP OVER THE EASTERN END OF THE LAKE WITH
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WATER LEVELS JUST OVER 5 FEET ABOVE NORMAL AT SUNRISE.  THESE MAY
RISE TO OVER 8 FEET ABOVE NORMAL BY THIS AFTERNOON.

A LAKESHORE FLOOD WARNING MEANS THAT FLOODING AND BEACH EROSION
WILL OCCUR. SOME LAKESHORE FLOODING HAS ALREADY BEEN REPORTED
NEAR EVANGOLA STATE PARK.  VISITORS SHOULD STAY AWAY FROM THAT
LOCALE AND ANY OTHER FLOODED AREAS.  COASTAL
RESIDENTS...ESPECIALLY THOSE FROM SILVER CREEK TO ANGOLA ON THE
LAKE...SHOULD BE ALERT AND BE PREPARED MOVE AWAY FROM THE BEACH.
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Example Coastal Flood Warning

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WHUS42 KTAE 240659
CFWTLH
FLZ028-034-241400-

BULLETIN-IMMEDIATE BROADCAST REQUESTED
COASTAL FLOOD WARNING
NATIONAL WEATHER SERVICE TALLAHASSEE FL
300 AM EDT TUE JUL 24 2001

...THE COASTAL FLOOD WARNING FOR DIXIE COUNTY HAS BEEN EXTENDED
UNTIL 10 AM EDT...

...A COASTAL FLOOD WARNING HAS BEEN ISSUED FOR TAYLOR COUNTY
UNTIL 10 AM EDT...

AT 230 AM EDT...MINOR COASTAL FLOODING HAD ALREADY BEEN OBSERVED
AT THE MOUTH OF THE STEINHATCHEE RIVER...WHICH RUNS BETWEEN DIXIE
AND TAYLOR COUNTIES. THE FLOODING IS BEING DRIVEN BY STRONG
ONSHORE WINDS EXCEEDING 30 MPH ASSOCIATED WITH AN AREA OF LOW
PRESSURE OVER APALACHEE BAY. THE WORST OF THE FLOODING CAN BE
EXPECTED AROUND THE TIME OF THE NEXT HIGH TIDE...WHICH WILL
GENERALLY OCCUR BETWEEN 530 AM EDT AND 600 AM EDT ALONG THE DIXIE
AND TAYLOR COUNTY COASTLINE. TIDES OF 2 TO 4 FEET ABOVE NORMAL
CAN BE EXPECTED...WHICH WILL CAUSE FLOODING IN LOW LYING AREAS.
CONDITIONS ARE EXPECTED TO IMPROVE BY LATE MORNING AFTER THE TIME
OF HIGH TIDE AS THE LOW PRESSURE SYSTEM MOVES INLAND OVER THE
FLORIDA BIG BEND.

A COASTAL FLOOD WARNING MEANS THAT FLOODING IS OCCURRING OR
IMMINENT. COASTAL RESIDENTS IN THE WARNED AREA SHOULD BE ALERT
FOR RISING WATER...AND TAKE APPROPRIATE ACTION TO PROTECT LIFE
AND PROPERTY. STAY TUNED TO NOAA WEATHER RADIO AND OTHER LOCAL
MEDIA FOR UPDATES.

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3. Examples of Coastal/Lakeshore Flood Statements

Example Coastal Flood Statement to cancel an existing Watch or Warning

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WHUS42 KJAX 161441
CFWJAX
FLZ024-025-033-038-161537-

COASTAL FLOOD STATEMENT
NATIONAL WEATHER SERVICE JACKSONVILLE FL
937 AM EST FRI NOV 16 2001

...COASTAL FLOOD WARNING CANCELED FROM FERNANDINA BEACH TO
FLAGLER BEACH...

ALTHOUGH WIND SPEEDS WILL REMAIN STRONG BETWEEN THE LOW PRESSURE
CENTER OFF THE FLORIDA EAST COAST AND HIGH PRESSURE TO THE
NORTH...THE WIND DIRECTION HAS SHIFTED TO THE NORTH. THIS HAS
SIGNIFICANTLY REDUCED THE THREAT FOR COASTAL FLOODING ALONG THE
NORTHEAST FLORIDA COAST. THEREFORE...THE COASTAL FLOOD WARNING
HAS BEEN CANCELED.

THIS IS THE LAST STATEMENT ON THIS COASTAL FLOODING EVENT.

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Example Coastal Flood Statement With Multiple Functions

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WHUS41 KAKQ 010249
CFWAKQ
MDZ025-NCZ102-VAZ095-098>100-011000-

COASTAL FLOOD STATEMENT
NATIONAL WEATHER SERVICE WAKEFIELD VA
1048 PM EDT SUN SEP 30 2001

...COASTAL FLOOD WATCH CANCELLED FOR NORFOLK...PORTSMOUTH...AND
VIRGINIA BEACH...

...COASTAL FLOOD WARNING CONTINUES IN EFFECT THROUGH MONDAY
MORNING  FOR THE MARYLAND BEACHES...

...HIGH SURF ADVISORY CONTINUES IN EFFECT FOR MID ATLANTIC
BEACHES FROM MARYLAND THROUGH CURRITUCK COUNTY NORTH CAROLINA...

AN INTENSIFYING LOW PRESSURE SYSTEM OFF THE MIDDLE ATLANTIC COAST
WILL PRODUCE NORTH AND NORTHEAST WINDS OF 25 TO 35 KTS
TONIGHT...WITH HIGHER GUSTS. THESE WINDS WILL PRODUCE SEAS OF 10
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TO 15 FEET FROM FENWICK ISLAND DELAWARE SOUTH TO CURRITUCK BEACH LIGHT NORTH CAROLINA...AS WELL AS GENERATE TIDES OF 2 TO 3 FEET ABOVE NORMAL IN THE CHESAPEAKE BAY FROM NEW POINT COMFORT TO CAPE HENRY...AND ALONG COASTAL AREAS FROM FENWICK ISLAND TO CURRITUCK BEACH LIGHT.

MINOR TO MODERATE COASTAL FLOODING WAS OBSERVED IN THE OCEAN CITY BAYSIDE LATE THIS EVENING AFTER THE TIME OF HIGH TIDE. HIGHER THAN NORMAL TIDE HEIGHTS WILL OCCUR AGAIN MONDAY MORNING...ESPECIALLY IN THE BAYSIDE OF OCEAN CITY...APPROXIMATELY 2 HOURS AFTER OCEAN CITY HIGH TIDE.

FOR AREAS ALONG THE SOUTHERN SHORE OF THE CHESAPEAKE BAY...THE POTENTIAL FOR MINOR COASTAL FLOODING EXITS WITH THE HIGH TIDE MONDAY MORNING. THE THREAT FOR MINOR COASTAL FLOODING WILL BE GREATEST IN THE NORFOLK...PORTSMOUTH AND VIRGINIA BEACH AREAS.

THE TIMES AND FORECAST HEIGHTS OF HIGH TIDES FOR SOME SELECTED LOCATIONS TONIGHT. HEIGHTS ARE GIVEN IN FEET WITH RESPECT TO MEAN LOWER LOW WATER...

OCEAN CITY MD...AT 723 AM MONDAY MORNING...6.0 FT.

SEWELLS POINT...AT 912 AM MONDAY MORNING...5.0 FT.

DUCK PIER NC...AT 729 AM MONDAY MORNING...6.3 FT.

HIGH TIDE LEVELS IN ISLE OF WIGHT BAY WILL BE APPROXIMATELY 930 AM.

THE HIGHER THAN NORMAL TIDES...AND THE POUNDING HIGH SURF WILL RESULT IN SOME MINOR BEACH EROSION ALONG MID ATLANTIC BEACHES AS WELL.

STAY TUNED TO NOAA WEATHER RADIO AND OTHER LOCAL MEDIA FOR FURTHER DETAILS OR UPDATES FROM THE NATIONAL WEATHER SERVICE...OR CHECK OUR WEB SITE AT HTTP://WWW.NWS.NOAA.GOV/ER/AKQ.

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Example Lakeshore Flood Statement to Cancel Lakeshore Warning

WHUS61 KBUF 122000
CFWBUF
NYZ010-019-122100-

LAKESHORE FLOOD STATEMENT
NATIONAL WEATHER SERVICE BUFFALO NY
300 PM EST TUE DEC 12 2000

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...LAKESHORE FLOOD WARNING CANCELLED...

THE LAKESHORE FLOOD WARNING THAT WAS IN EFFECT FOR THE LAKE ERIE
COAST FROM DUNKIRK TO BUFFALO NEW YORK HAS BEEN CANCELLED.

THE STRONG STORM SYSTEM THAT PRODUCED SUSTAINED WESTERLY WINDS OF
UP TO 60 MILES AN HOUR EARLIER TODAY OVER LAKE ERIE HAS MOVED
AWAY.  MINOR FLOODING NOW OCCURRING ALONG THE LAKESHORE WILL SOON
ABATE AS WINDS HAVE DECREASED TO 25 TO 35 MPH AND WAVES HAVE
DECREASED TO 4 TO 6 FEET.  WINDS AND WAVES WILL DECREASE FURTHER
TONIGHT.
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RSH
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Example Coastal Flood Statement Directing Users to Hurricane Local Statements

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WHUS42 KMFL 040351
CFWMIA
FLZ067-068-071>074-040451-

COASTAL FLOOD STATEMENT
NATIONAL WEATHER SERVICE MIAMI FL
1051 PM EST SAT NOV 3 2001

A HURRICANE LOCAL STATEMENT WILL BE ISSUED BY THE MIAMI FORECAST
OFFICE AT 11 PM TONIGHT.  EFFECTIVE AT 11 PM TONIGHT COUNTY-
SPECIFIC INFORMATION ABOUT COASTAL FLOODING AND OTHER SIGNIFICANT
WEATHER IMPACTS ASSOCIATED WITH HURRICANE MICHELLE WILL BE ISSUED
BY THE NATIONAL WEATHER SERVICE OFFICE IN MIAMI USING A
COMPREHENSIVE HURRICANE LOCAL STATEMENT.  UNTIL FURTHER NOTICE
SEPARATE COASTAL FLOOD STATEMENTS WILL NOT BE ISSUED BY THE
NATIONAL WEATHER SERVICE OFFICE IN MIAMI.

HURRICANE LOCAL STATEMENTS WILL BE ISSUED UNDER THE WMO HEADER
WTUS82 KMFL.   NOAAPORT DATA USERS WILL FIND THE STATEMENTS UNDER
THE HEADER HLSMIA.

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4. Example NWS Tide Report

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SOUS44 KLIX 051301
TIDNEW

LOUISIANA COASTAL TIDE DATA
NATIONAL WEATHER SERVICE NEW ORLEANS LA
705 AM CST TUE FEB 05 2002
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...LOUISIANA COASTAL TIDE DATA FOR...WED FEB 06 2002

CALCASIEU PASS...LIGHTHOUSE WHARF
LO    4 17 AM    STAGE   -1.2    HI   12 14 PM    STAGE    0.9
LO    6 06 PM    STAGE    0.2    HI    9 36 PM    STAGE    0.4

SHELL ISLAND...ATCHAFALAYA BAY
LO    5 15 AM    STAGE   -1.6    HI    4 10 PM    STAGE    0.2

BARATARIA PASS...GRAND ISLE
LO    4 12 AM    STAGE   -1.1    HI    5 50 PM    STAGE    0.5

RIGOLETS...LAKE BORGNE
LO    6 53 AM    STAGE   -0.9    HI    8 03 PM    STAGE    0.4

SOUTHWEST PASS...MISSISSIPPI RIVER
LO    2 40 AM    STAGE   -1.2    HI    4 00 PM    STAGE    0.6

WINE ISLAND...TERREBONNE BAY
LO    5 24 AM    STAGE   -1.2    HI    5 58 PM    STAGE    0.6
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5. Example Great Lakes Water Level Report

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SXUS08 KDTX 281504
OMRDTX

GREAT LAKES WATER LEVELS
NATIONAL WEATHER SERVICE DETROIT/PONTIAC MI
1005 AM EST MON JAN 28 2002

THE FOLLOWING ARE THE MEAN LAKE LEVELS FORECAST OVER THE NEXT
WEEK.

LAKE                 LEVEL... INCHES FROM CHART DATUM

SUPERIOR               1
MICHIGAN AND HURON    -2
ST CLAIR              10
ERIE                  15
ONTARIO               16
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